



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,481	03/09/2004	Samir F. Bassily	PD-01-439	2295
22462	7590	06/03/2005	EXAMINER	
GATES & COOPER LLP HOWARD HUGHES CENTER 6701 CENTER DRIVE WEST, SUITE 1050 LOS ANGELES, CA 90045			LE, HOANGANH T	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EV

# Office Action Summary

Application No.

10/796,481

Applicant(s)

BASSILY, SAMIR F.

Examiner

HoangAnh T. Le

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

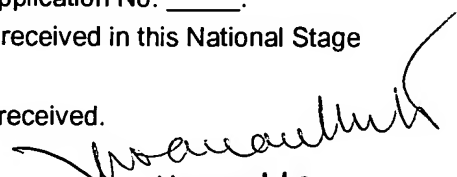
## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
HoangAnh Le  
Primary Examiner

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

**DETAILED ACTION**

1. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4-13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, "the distance V" has no antecedent basis.

In claims 5,6, and 9-12, "H" has no antecedent basis.

In claim 9, S=0.496 of what?

In claim 16, "the distance from the first row of elements" has no antecedent basis.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 7, 14-17, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Fraser (the US Patent No. 6,384,516).

The Fraser reference teaches in figure 2 a direct radiating array (DRA), comprising: a plurality of elements 120, collectively defining a DRA main lobe nearest a DRA boresight and a set of grating lobes nearest the DRA main lobe, wherein each of the grating lobes in the set of grating lobes is angularly displaced from the main lobe by a grating lobe angle that varies asymmetrically about the DRA main lobe. The plurality of elements comprises: a first row of elements extending in a first direction; and a second row of elements, parallel to the first row of elements, the second row of elements offset from the first row of elements in the first direction by a stagger distance S. Each element of the first row of elements is spaced apart from an adjacent element in the first row of elements by a distance V; and each element of the second row of elements is spaced apart from an adjacent element of the second row of elements by the distance V and the second row of elements is spatially displaced from the first row of elements in a direction perpendicular to the first direction by a distance H. The stagger distance S divided by the distance V is between 0 and 1 (figure 2). The first direction is tilted from a North direction by a tilt angle between 0 and 90 degrees (figure 1b). The plurality of elements comprises: a first row of elements extending in a first direction; a second row of elements, parallel to the first row of elements; a third row of elements, parallel to the first row of elements and the second row of elements; wherein the second row of elements is disposed between the first row of elements and the third row of elements; and wherein the second row of elements is offset from the first row of

elements in the first direction and the third row of elements is offset from the first row of elements in the first direction by a stagger distance  $S$  that varies as a non-linear function of a distance from the first row of elements extending in a second direction perpendicular to the first direction (figure 2). The distance from the first row of elements is  $D$  and the function is proportional to  $D$  (figure 2). The first direction is tilted from a North direction by a tilt angle (figure 1b).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5,6,8-13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser (cited above).

The Fraser reference teaches every feature of the claimed invention, excluding  $S=0.45V$ ,  $H=V=3.75\lambda$ , the tilt angle being equal to 14 degrees,  $S=0.496V$ ,  $H=V=3.89\lambda$ ,  $H/V \neq 1$ ,  $H/V = 1.525$ , or  $V=3.54\lambda$ , or  $H=5.4\lambda$ .

It would have been an obvious matter of design choice to provide Fraser with  $S=0.45V$ ,  $H=V=3.75\lambda$ , the tilt angle being equal to 14 degrees,  $S=0.496V$ ,  $H=V=3.89\lambda$ ,  $H/V \neq 1$ ,  $H/V = 1.525$ , or  $V=3.54\lambda$ , or  $H=5.4\lambda$ , since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art.

***Allowable Subject Matter***

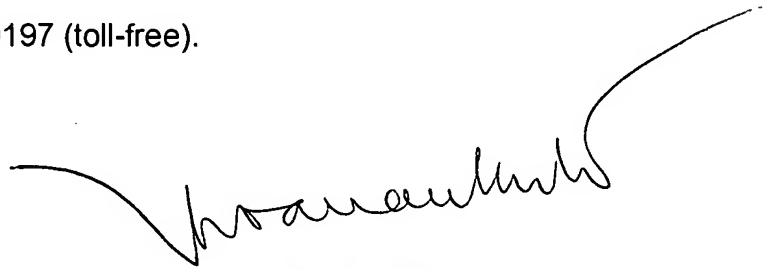
8. Claims 21-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: none of the cited art discloses the step of computing H, V and S from a relationship between the angular position of a plurality of grating lobes and the parameters H,V,S, and a wavelength  $\lambda$  of a signal emitted by the DRA comprises the steps of: defining a triangle formed by a centroid of a first element in the first row of elements, a centroid of a second element in the first row of elements adjacent the first element, and a centroid of a third element in the second row of elements, the third element adjacent the first element in the first row of elements and the second element in the first row of elements; scaling the triangle by a scale factor  $C = \lambda / (V.H)$ ; and determining the angular position of the grating lobes from the vertices of the scaled triangle.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Hoanganh Le', with a long, sweeping horizontal line extending to the right.

**Hoanganh Le**  
**Primary Examiner**